

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-10. (Cancelled)

11. (Currently amended) ~~Thermostat valve arrangement for the cooling circuit of an internal combustion engine in which a main valve member of a main valve is movably mounted in a housing, which main valve member being able to be pressed against a main valve seat by a spring, in which a bypass valve member of a bypass valve is further provided which co operates with a bypass valve seat in the housing and in which a first section of an expansion element (DWE) co operates with an abutment fixed to the housing and a second section co operates with the main valve member and the bypass valve member such that the main valve or bypass valve is selectively closed and/or opened, in order to produce the cooling circuit of the internal combustion engine by means of a radiator or a bypass, characterised in that the main valve seat is formed from a conical seat surface in the housing, the main valve member forms a valve unit with an axially spaced piston shaped bypass valve member, which valve unit receives the expansion element in an axial recess in one direction in an axially secure manner, whilst the other end of the expansion element is supported by an abutment of the housing, the valve unit is displaceably and axially guided in a guide component which, in turn, is axially supported in the housing, a valve spring operating between the valve unit and the guide component, which valve spring biases the unit in the direction of the main valve seat and the valve unit and the guide component comprising co operating stops by means of which the movement of the parts away from each other is limited and the piston shaped bypass valve member co operates with a hollow cylindrical section of the guide component.~~

A thermostat valve arrangement for a cooling circuit of an internal combustion engine, the thermostat valve arrangement comprising:

a housing having a main conical sealing valve seat;
a guide component supported by the housing and having a hollow cylindrical section;
a main valve member movably engageable with the main conical sealing valve seat
formed on the housing;

a bypass valve member spaced from the main valve member in an axial direction of the
main valve member and movably engageable with the hollow cylindrical section of the guide
component;

an expansion element within the housing having a first section and a second section, said
first section cooperable with an abutment fixed to the housing and said second section
cooperable with the main valve member and the bypass valve member in the axial direction of
the main valve member such that the main valve or the bypass valve is selectively closed or open
to produce the cooling circuit of the internal combustion engine; and

a valve spring between the main valve member and the guide component and surrounding
the expansion element and the guide component,

wherein

when the main valve member is closed, the main valve member is biased by the valve
spring to be directly engaged with the main valve seat, and the bypass valve member is
disengaged from the hollow cylindrical section of the guide component;

when the main valve member is open, the main valve member is pressed by an expansion
of the expansion element and disengaged from the main valve seat, and the bypass valve member
is pressed by the expansion of the expansion element into the hollow cylindrical section of the
guide component.

12. (Currently amended) Valve—The thermostat valve arrangement according to
claim 11, characterised in thatwherein the main valve member comprises two coaxial
a first plate and a second plate separated from the first plate, said first and second plates
which may be coaxially connected to one another, and which receive
a sealing ring formed between one anotherthe two plateswhich may be brought into
engagement and directly engageable with the main conical sealing surface of the main valve seat.

13. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 12, characterised in that wherein the first and second plates may be are connected to one another in a snap connection by means of snap in pins and snap in holes or the like.

14. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 12~~claim 13~~, characterised in that wherein the expansion element comprises a shaft at the first section~~which, on the end~~ facing the main valve seat, has and a radial flange at the second section~~which is~~ received in a complementary recess of the first plate which faces said flange.

15. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 11, characterised in that wherein the main valve member is connected to the piston-shaped bypass valve member via a plurality of axially parallel projections in the axial direction of the main valve member.

16. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 12~~claim 15~~, characterised in that wherein the second plate facing the piston-shaped bypass valve member is connected therewith with the bypass valve member via the projections, and forms therewith the second plate, the projections and the bypass valve member are an integral component.

17. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 11, characterised in that wherein the guide component comprises at least one axially parallel guide groove parallel to the axial direction of the main valve member and which extends extending into the hollow cylindrical section, and which said guide groove, on the end facing the piston-shaped bypass valve member, comprises includes a section which is facing the bypass valve member~~open to the side~~, and

the piston-shaped bypass valve member comprises a radial lug which may be introduced into the section of the guide groove therein via the lateral section of the groove in the style of a bayonet connection.

18. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 17, characterised in that wherein the guide component comprises a plurality of axially parallel arms parallel to the axial direction of the main valve member and spaced apart from one another in the peripheral a peripheral direction of the guide component, in which one respective wherein said guide component includes multiple said guide grooves each of which is configured in a respective one of the arms.

19. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 11, characterised in that wherein the guide component comprises a radial flange projecting outwardly and on which the valve spring is directly supported.

20. (Currently amended) The thermostat valve~~Valve~~ arrangement according to claim 11, characterised in that wherein the housing further comprises an annular groove supporting the guide component, and the guide component ~~on the end facing a bearing surface for the guide component in the housing,~~ comprises a projection or an annular rib which ~~co-operates~~ cooperating with an annular the annular groove in the support surface for to be supported by the guide component.

21. (New) The thermostat valve arrangement according to claim 12, wherein the first plate comprises a plurality of recesses formed on a side of the first plate facing the second plate, and
the second plate comprises a plurality of pins passing through the sealing ring and directly engageable with the plurality of recesses of the first plate.

22. (New) A thermostat valve arrangement for a cooling circuit of an internal combustion engine, the thermostat valve arrangement comprising:

 a housing having a main conical sealing valve seat;
 a guide component supported by the housing and having a hollow cylindrical section;
 a main valve member movably engageable with the main conical sealing valve seat formed on the housing;

a bypass valve member spaced from the main valve member in an axial direction of the main valve member and movably engageable with the hollow cylindrical section of the guide component;

an expansion element within the housing having a first section and a second section, said first section cooperable with an abutment fixed to the housing and said second section cooperable with the main valve member and the bypass valve member in the axial direction of the main valve member such that the main valve or the bypass valve is selectively closed or open to produce the cooling circuit of the internal combustion engine; and

a valve spring between the main valve member and the guide component,

wherein

when the main valve member is closed, the main valve member is biased by the valve spring to be directly engaged with the main valve seat, and the bypass valve member is disengaged from the hollow cylindrical section of the guide component;

when the main valve member is open, the main valve member is pressed by an expansion of the expansion element and disengaged from the main valve seat, and the bypass valve member is pressed by the expansion of the expansion element into the hollow cylindrical section of the guide component,

the guide component comprises at least one guide groove parallel to the axial direction of the main valve member and extending into the hollow cylindrical section, and said guide groove includes a section facing the bypass valve member, and

the bypass valve member comprises a radial lug introduced into the section of the guide groove in a bayonet connection.

23. (New) The thermostat valve arrangement according to claim 22, wherein the main valve member comprises

a first plate and a second plate separated from the first plate, said first and second plates coaxially connected to one another, and

a sealing ring formed between the two plates and directly engageable with the conical sealing valve seat.

24. (New) The thermostat valve arrangement according to claim 23, wherein the first and second plates are connected to one another in a snap connection.

25. (New) The thermostat valve arrangement according to claim 24, wherein the expansion element comprises a shaft at the first section facing the main valve seat and a radial flange at the second section received in a complementary recess of the first plate which faces said flange.

26. (New) The thermostat valve arrangement according to claim 22, wherein the main valve member is connected to the bypass valve member via a plurality of axially parallel projections in the axial direction of the main valve member.

27. (New) The thermostat valve arrangement according to claim 26, wherein the second plate facing the bypass valve member is connected with the bypass valve member via the projections, and the second plate, the projections and the bypass valve member are an integral component.

28. (New) The thermostat valve arrangement according to claim 22, wherein the guide component comprises a plurality of arms parallel to the axial direction of the main valve member and spaced apart from one another in a peripheral direction of the guide component, wherein said guide component includes multiple said guide grooves each of which is configured in a respective one of the arms.

29. (New) The thermostat valve arrangement according to claim 22, wherein the guide component comprises a radial flange projecting outwardly and on which the valve spring is directly supported.

30. (New) The thermostat valve arrangement according to claim 22, wherein the housing further comprises an annular groove supporting the guide component, and the guide component comprises a projection or an annular rib cooperating with the annular groove to be

supported by the guide component.